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Experiment: 16. Implement a Sobel algorithm using Open CV to filter the input image.

Code:

```
import cv2  
  
i = cv2.imread("image.jpg")  
  
g = cv2.cvtColor(i, cv2.COLOR_BGR2GRAY)  
  
sx = cv2.Sobel(g, cv2.CV_64F, 1, 0, ksize=3)  
sy = cv2.Sobel(g, cv2.CV_64F, 0, 1, ksize=3)  
  
s = cv2.magnitude(sx, sy)  
  
cv2.imshow("Original Image", i)  
  
cv2.imshow("Sobel Edge Image", s)  
  
cv2.waitKey(0)  
  
cv2.destroyAllWindows()
```

Input and Output:

